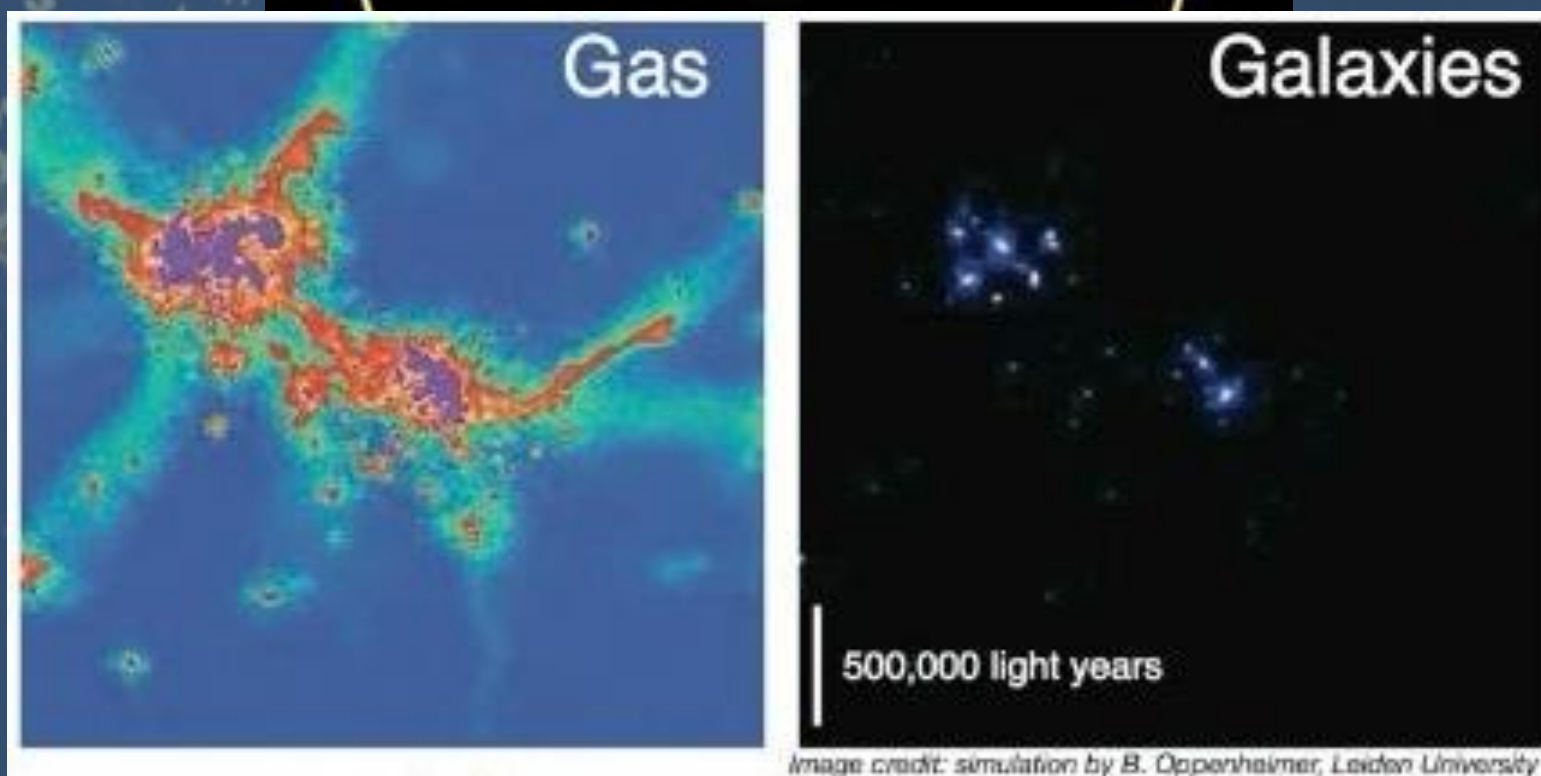


### What is the CGM?

- Circumgalactic medium is a halo of diffuse gas around a galaxy
- Inflow of fuel (gas) for new stars
- Outflow of enriched dust from stellar deaths
- Acts as a link between galaxies and the cosmic web



### Aim and method

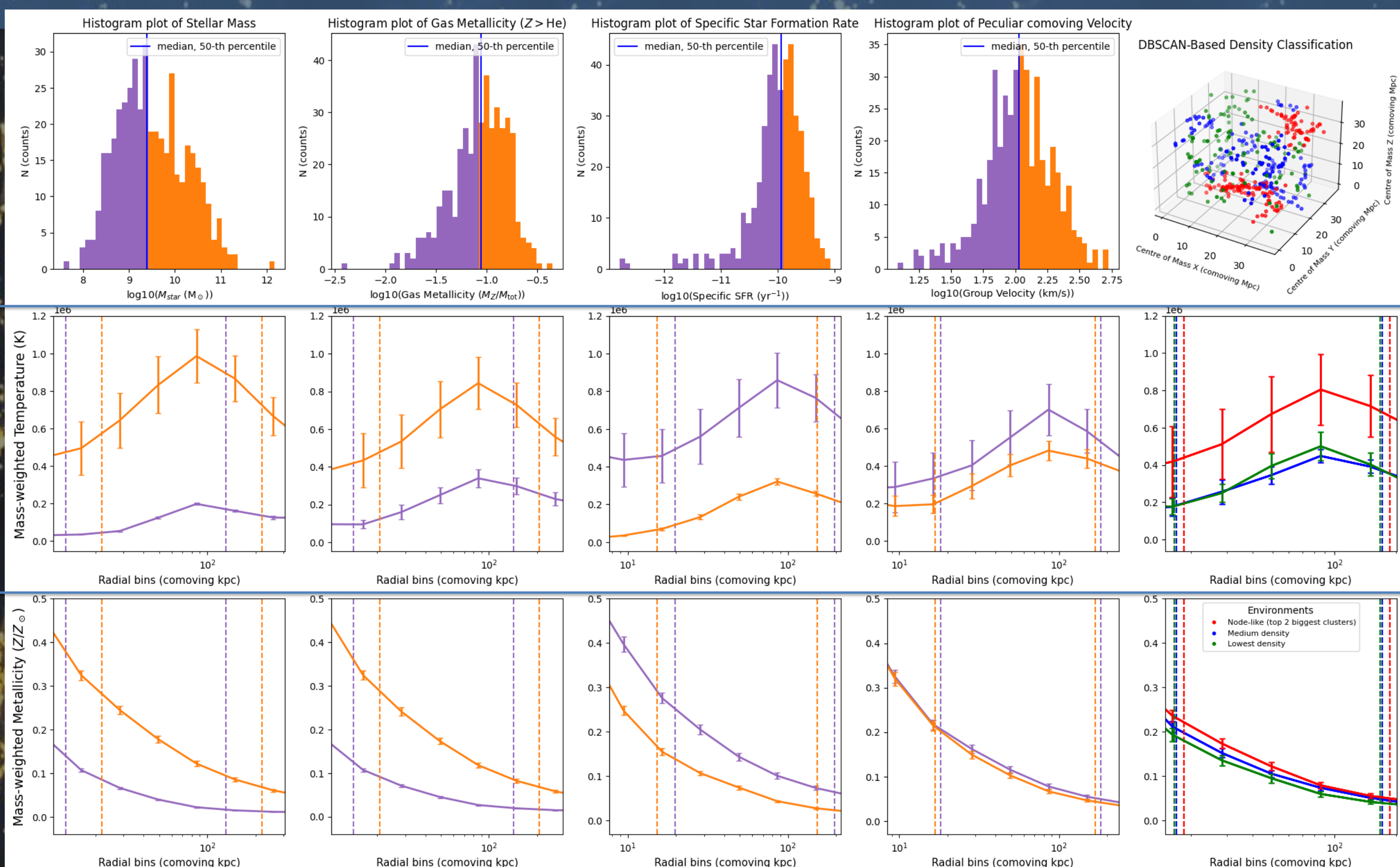
- Aim: Test how galaxy properties affect the CGM and whether cosmic environment leaves an imprint
- Approach:
  - 1) Property histogram split along the median
  - 2) Density based clustering DBSCAN to mimic cosmic web

### Challenges and impact

- Challenges: small sample (~450/20000 galaxies), resolution limited, and simulations approximate physics
- Impact: the CGM regulates galaxy growth and recycling
- Next steps: larger dataset and refined environment classification methods

### Results

- Density & thermal-pressure (not plotted): little variation across galaxy populations
- Temperature (plotted): hotter halos in massive/metal-rich galaxies; cooler halos in high star formation rate galaxies
- Metallicity (plotted): higher in massive galaxies; lower in galaxies with high velocities or high star formation rates
- Environment (nodes vs. lower density): weak influence on CGM compared to galaxy internal properties



Temperature

Metallicity

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